Canadian Journal of Physics

Revue canadienne de physique

Contents
Volume 77, 1999

Sommaire
Volume 77, 1999

January / janvier

M. Elia and A. Hirose Effects of the Shafranov shift on the ballooning mode in negative shear 1

C.S. Wood, S.C. Bennett, J.L. Roberts, D. Cho, and C.E. Wieman Precision measurment of parity in nonconservation in cesium 7

F.-H. Liu and J.-F. Sun Multiplicity and pseudorapidity distribution in high-energy neutrino–emulsion collisions 77

Notice to authors IFC

Note aux auteurs au plat intérieur supérieur

Instructions to authors I-1

Recommandations aux auteurs R-1

February / février

M. Kamela and C.P. Burgess Massive-scalar effective actions on anti-de Sitter spacetime 85

S. Janardhan, S. Ravinder, Ch. Radhakrishna Murthy, G. Krishna Rao, and A.S. Nageswara Rao Whole-atom differential incoherent-scattering cross sections at 279.2 keV 101

M. Shoucri and R. Marchand Numerical simulation of the excitation and evolution of coherent vortices in hollow magnetized electron columns 105

J.L.V. Lewandowski Radial structure of electron drift waves and anomalous transport in the edge plasma 113

F. Alouani Bibi, V.T. Lazurik et Y.V. Rogov Distribution spatiale de la charge déposée dans des cibles minces irradiées par des électrons 127

R.E. Irving, M. Henderson, L.J. Curtis, I. Martinson, and P. Bengtsson Accurate transition probabilities for the $2s^2\ ^1S - 2s2p\ ^1P$ transition in Be I and B II 137

Michael A. Vaksman and Justin L. Dahl Surface light-induced drift due to anisotropic gas–surface scattering in models with and without boundary conditions 145

M.S. Wartak, M. Kucharczyk, and T. Makino The effect of carrier capture and escape on the optical gain of quantum-well semiconductor lasers 157

Notice to authors IFC

Note aux auteurs au plat intérieur supérieur

March / mars

T. Melde A photon number density operator in the covariant formulation of quantum electrodynamics 167

C. Froese Fischer and Xinghong He Transition energies and transition rates for the $2p^4(^3P)3p - 2p^4(^3P)3d$ transitions in Ne II 177

Ronald Bryan Are the Dirac particles of the Standard Model dynamically confined states in a higher dimensional flat space? **197**

Jian Fu, Xiao-Chun Gao, Jing-Bo Xu, and Xu-Bo Zou Exchange of nonclassical properties between two interacting modes of light and mutual conversion of the Fock and coherent states **211**

R.A. Moore Formal quantization of a chaotic model problem **221**

Nam Lyong Kang, Jai Yon Ryu, and S.D. Choi *Research note / Note de recherche* A many-body projection approach to quantum-limit magneto-optical transition of two-dimensional electrons confined in a parabolic well **235**

Notice to authors **IFC**

Note aux auteurs **au plat intérieur supérieur**

Obituary / Notice nécrologique **iv-ix**

April / avril

Savely G. Karshenboim What do we actually know about the proton radius? **241**

P. Labelle and S.M. Zebarjad Derivation of the Lamb shift using an effective field theory **267**

K.A. Helmy On the solution of general thermo-magnetohydrodynamic elasticoviscous flow **279**

Tamara Ya. Karagodova Resonant fluorescence spectra of a multilevel system in intense radiation and external magnetic fields **299**

Fu-Hu Liu and Yuri A. Panebratsev Pseudorapidity distribution of relativistic singly charged particles in heavy-ion collisions at high energy **313**

Robert Carroll Some remarks on time, uncertainty, and spin **319**

Notice to authors **IFC**

Note aux auteurs **au plat intérieur supérieur**

May / mai

Diptiman Sen and R.K. Bhaduri Density–density correlations in a Luttinger liquid: Lattice approximation in the Calogero–Sutherland model **327**

Altuğ Şişman High-temperature corrections for the classical expressions of radiative losses from a black body **343**

D.D. Betts, H.Q. Lin, and J.S. Flynn Improved finite-lattice estimates of the properties of two quantum spin models on the infinite square lattice **353**

E. Abou-Allam, T. Manku, C.-H. Chen, and M.J. Deen A self-consistent lumped radio frequency linear network model for MOSFETs taking into account the gate resistance **371**

Magdi Shoucri Helicon waves in a cylindrical plasma **385**

Sree Ram Valluri, Richard Biggs, William Harper, and Curtis Wilson The significance of the Mathieu–Hill differential equation for Newton's apsidal precession theorem **393**

J.L.V. Lewandowski *Erratum*: Radial structure of electron drift waves and anomalous transport in the edge plasma **409**

Notice to authors **IFC**

Note aux auteurs **au plat intérieur supérieur**

June / juin

Jung-Hoon Kim and Hai-Woong Lee Canonical transformations and the Hamilton–Jacobi theory in quantum mechanics **411**

S.B. Phillips Spinning strings of the Neveu–Schwarz–Ramond type in 3, 4, 6, and 10 space-time dimensions 427

J.L.V. Lewandowski and Mikael Persson Effect of magnetic field structure on collisional drift waves 447

M.A. Mansour, A.A. Mohammadein, S.M.M. El-Kabeir, and Rama Subba Reddy Gorla Heat transfer from moving surfaces in a micropolar fluid 463

D. Yang, N. Udey, and T.J.T. Spanos A thermodynamic lattice gas model of Poiseuille flow 473

J.I. da Silva, R. Holz, and A.S.B. Sombra Soliton transmission under pulse position modulation in optical fibres 481

Notice to authors IFC

Note aux auteurs **au plat intérieur supérieur**

July / juillet

Marcis Auzinsh *Tutorial/Article didactique* The evolution and revival structure of angular momentum quantum wave packets 491

Pirooz Mohazzabi and Jeffrey R. Schmidt *Tutorial/Article didactique* Profile of a rotating string 505

A.A.I. Al-Bassam Lattice parameters and optical absorption of $CuIn_{1-x}Ga_xSe_2$ thin films 515

Ji Chen, Kai Hong Li, and Ji Hua Wen Relativistic high-order harmonics of a hydrogenlike atom in an ultrastrong laser field 521

D. Branch and J.P. Carbotte Optical conductivity in model with anisotropic inelastic scattering 531

G.N. Afanasiev and V.G. Kartavenko Cherenkov-like shock waves associated with surpassing the light velocity barrier 561

Notice to authors IFC

Note aux auteurs **au plat intérieur supérieur**

August / août

T.M. Luke Transition rates in singly ionized titanium 571

M. Moradi and M. Kavosh Tehrani Solvation force in a hard-sphere fluid 585

P. Panek, J.Z. Kamiński, and F. Ehlotzky Angular and polarization effects in relativistic potential scattering of electrons in a powerful laser field 591

J. Grindlay Lyapunov and marginal instability in Hamiltonian systems 603

Tam Do-Nhat Asymptotic expansion of the Mathieu and prolate spheroidal eigenvalues for large parameter c 635

Notice to authors IFC

Note aux auteurs **au plat intérieur supérieur**

September / septembre

B. Sahouli, S. Blacher, F. Brouers, and L. Chahed Fractal analysis methods to characterize porous solids using nitrogen adsorption data 653

Y. Bouizem, J.D. Sib, L. Chahed, and M.L. Thèye Comparative studies of the influence of hydrogen incorporation on the electronic properties of a-Ge:H films prepared by two different techniques 659

V. Meunier et P. Lambin Propriétés structurales des jonctions de nanotubes de carbone 667

F. Hellal, J. Lacaze et A. Hazotte Diffusion du carbone lors de la décomposition de l'austénite en ferrite et en graphite dans une fonte à graphite sphéroïdal 677

Cyril Lupi, Eric Tanguy, Christian Boisrobert et Frédérique de Fornel Interférométrie et réflectométrie haute résolution en lumière incohérente : modélisation d'interférogrammes **685**

M. Diaf, A. Braud, C. Labbé, J.L. Doualan, S. Girard, J. Margerie, R. Moncorgé, and M. Thuau Synthesis and spectroscopic studies of Tm^{3+}-doped KY_3F_{10} single crystals **693**

R. Gharbi, M. Fathallah, C.F. Pirri, E. Tresso, G. Crovini, and F. Giorgis Properties of a-SiC:H films and solar cells **699**

M. Mnari, B. Cros, M. Amlouk, S. Belgacem, and D. Barjon Study of the elastic properties of sprayed SnO_2 and SnS_2 layers **705**

A. Maalej, M. Bahri, Y. Abid et N. Jaïdane Modélisation moléculaire et calcul des fréquences de vibration du sous-réseau perovskite dans $CH_3NH_3PbCl_3$ **717**

Ahmed Ennaoui Chemical bath process for highly efficient Cd-free chalcopyrite thin-film-based solar cells **723**

H. Atmani, S. Grognet, J. Teillet, K. Zellama, and R. Zuberek Structural and magnetic properties of nitrided finemet-type ribbons **731**

B. Semmache, S. Kallel, H. El Omari, M. Lemiti et A. Laugier Dépôt chimique en phase vapeur et à basse pression de couches minces à base de silicium dans un réacteur à lampes halogène **737**

F. Karray, Z. Fakhfakh, A. Kallel et R. Turki Interface tissus vivants–matériaux inertes **745**

Notice to authors **IFC**

Note aux auteurs **au plat intérieur supérieur**

Preface / Avant-propos **vii**

October / octobre

Paul Bracken Classical Yang–Mills equations invariant under subgroups of the conformal group without coupling to matter **751**

R.I. Campeanu, R.P. McEachran, and A.D. Stauffer Positron impact ionization of krypton and xenon **769**

M. Villavicencio, J.L. Jiménez, and J.A.E. Roa-Neri On the Cherenkov radiation from extended charge distributions **775**

C. Wolf Dissipative quantum evolution of a spin system in a magnetic field **785**

J.M.S. Rana Duality and color confinement in restricted gauge theory **795**

Magdy A. Ezzat, Mohamed I. Othman, and Kamal A. Helmy A problem of a micropolar magnetohydrodynamic boundary-layer flow **813**

A. Hirose and O. Ishihara On plasma diffusion in strong turbulence **829**

Notice to authors **IFC**

Note aux auteurs **au plat intérieur supérieur**

November / novembre

G.W.F. Drake and S.P. Goldman Bethe logarithms for Ps^-, H^-, and heliumlike atoms **835**

Mark R.A. Shegelski, Matthew Reid, and Ross Niebergall The motion of rotating cylinders sliding on pebbled ice **847**

Daniel A. Morales and Zaida Parra-Mejías On the relationship between anharmonic oscillators and perturbed Coulomb potentials in *N* dimensions **863**

Filiz Birbir and Alinur Büyükaksoy Plane wave diffraction by two parallel overlapped thick semiinfinite impedance plates **873**

V.K.B. Kota, D. Majumdar, R. Haq, and R.J. Leclair Shell-model tests of the bimodal partial state densities in a 2×2 partitioned embedded random matrix ensemble **893**

Mark R.A. Shegelski and Matthew Reid *Comment on*: Curling rock dynamics — The motion of a curling rock: inertial vs. noninertial reference frames **903**

Mark Denny *Reply to comment on*: Curling rock dynamics — The motion of a curling rock: inertial vs. noninertial reference frames **923**

December / décembre

Yongping Zheng, Roman Gr. Maev, and Igor Yu. Solodov *Review/Synthèse* Nonlinear acoustic applications for material characterization: A review **927**

Pirooz Mohazzabi *Tutorial/Article didactique* Derivatives of curvilinear coordinate unit vectors: A concise matrix–vector approach **969**

Karen L. Kavanagh Atomic interface structure-property investigations **985**

Bouabdallah Rahmani, Shing Y. Liu, Kouiti Yasuoka, Hafid A. Belbachir, and Shozo Ishii VUV lasing on puff metal vapor of neon-like aluminum ions produced by Z-pinch plasma **995**

Notice to authors **IFC**

Note aux auteurs **au plat intérieur supérieur**

Author Index / Index des auteurs **AI-1**

Subject Classificaton / Classification thématique **SC-1**

Contents / Sommaire **C-1**